

40. (New) The method of claim 39, wherein etching the conductive layer to connect each of at least two of the three vias to the conductive layer through a tapered conductive segment comprises:

etching a tapered conductive segment having a hyperbolic taper.

REMARKS

Applicant has reviewed and considered the office action mailed on December 3, 2001 and the references cited therewith.

Claim 2 is amended, claims 1 and 6-15 are canceled, and claims 21-40 are added; as a result, claims 2-5 and 21-40 are now pending in the application.

Information Disclosure Statement

Applicant respectfully requests that a copy of the 1449 Form, listing all references that were submitted with the Information Disclosure Statement filed on December 8, 2000, marked as being considered and initialed by the Examiner, be returned with the next official communication.

Affirmation of Election

Applicant affirms the election without traverse of Group I, species 1, claims 1-5, by applicant's representative, Danny J. Padys, in a telephone conversation on November 15, 2001 and the cancellation, without prejudice or disclaimer, of claims 6-15. Applicant reserves the right to file continuations or divisions having claims directed to the non-elected inventions at a later date.

Rejections Under 35 U.S.C. § 112

Claims 1-5 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-5 were also rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the

elements.

Claim 1 is cancelled without prejudice or disclaimer by this amendment, so the claim 1 rejection is moot. Applicant traverses the rejections of claims 2-5.

The office action alleges that "coupled" is indefinite. Applicant respectfully disagrees regarding the indefiniteness of the quoted passage. The Board of Patent Appeals and Interferences has stated:

In rejecting a claim under the second paragraph of 35 U.S.C. § 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. *Ex parte* Wu, 10 USPQ 2d 2031, 2033 (B.P.A.I. 1989)(citing *In re* Moore, 439 F.2d 1232, 169 USPQ 236 (C.C.P.A. 1971); *In re* Hammack, 427 F.2d 1378, 166 USPQ 204 (C.C.P.A. 1970)).

The M.P.E.P. adopts this line of reasoning, stating that:

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (1) The content of the particular application disclosure;
- (2) The teachings of the prior art; and
- (3) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. *M.P.E.P.* § 2173.02.

Applicant respectfully submits that the claim language in question, when analyzed in light of the content of the application disclosure, is not indefinite. The application disclosure, at page 3, lines 22-27, provides:

The interconnect 100 includes a pad 102 and three vias 104-106 coupled to the pad 102. The via 104 is *coupled* to the pad 102 by a conductive segment 110. The via 105 is *coupled* to the pad 102 by a conductive segment 112. The via 106 is directly *coupled* to the pad 102. To directly *couple* the via 106 to the pad 102, after the via 106 is formed in the substrate 101, the pad 102 is formed substantially over the via 106 such that the via 106 is physically and electrically *coupled* to the pad 102. (emphasis added)

Since the specification defines "coupled", applicant respectfully submits that the

rejections of claims 2-5 have been overcome. Therefore, applicant requests withdrawal of the rejections and reconsideration and allowance of claims 2-5.

Rejections Under 35 U.S.C. §102

Claims 1-3 were rejected under 35 U.S.C. §102(e) as being anticipated by Fasano et al. (U.S. Patent No. 6,312,791). Claim 1 is canceled, so the rejection of claim 1 is moot. Applicant traverses the rejection of claim 3.

Applicant does not admit that Fasano et al. is prior art and reserves the right to swear behind Fasano et al. as provided for under 37 C.F.R. 1.131.

Claim 2, as amended, recites "at least two vias coupled to the pad, wherein *only* one of the at least two vias is formed substantially beneath the pad." (emphasis added)

In contrast, as can be seen in FIG. 3E of Fasano et al., all vias are formed substantially beneath the pad.

Hence, Fasano et al. does not teach "at least two vias coupled to the pad, wherein *only* one of the at least two vias is formed substantially beneath the pad." (emphasis added)

Thus, Fasano et al. does not teach each of the elements of claim 2, so the office action fails to state a *prima facie* case of anticipation with respect to claim 2.

Therefore, applicant requests withdrawal of the rejection and reconsideration and allowance of claim 2.

Claim 3 recites "... at least one of the at least two vias is coupled to the pad by a conductive segment"

In contrast, Fasano et al. does not teach a conductive segment to couple a via to a pad. As can be seen in FIG. 3E, Fasano et al. only teaches vias 114 coupled directly to pads 116 and 124.

Hence, Fasano et al. does not teach "... at least one of the at least two vias is coupled to the pad by a conductive segment"

Thus, Fasano et al. does not teach each of the elements of claim 3, so the office action fails to state a *prima facie* case of anticipation with respect to claim 3.

Therefore, applicant requests withdrawal of the rejection and reconsideration and allowance of claim 3.

Rejections Under 35 U.S.C. §103

Claims 4 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fasano et al. (U.S. Patent No. 6,312,791). Applicant traverses the rejections of claims 4 and 5.

Claim 4 recites "... the pad has at least five substantially straight edges and the at least two vias comprise three vias and only two of the three vias are coupled to the substantially straight edges." The office action does not cite to a reference that teaches or suggests the elements of claim 4. The office action cites to *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966), to support the proposition that changes in shape of an element (the pad) is recognized as being within the level of ordinary skill in the art. *In re Dailey* is inapplicable to this case because it differs from this case in the following: (1) *In re Dailey* involves non-analogous art (nursing containers), (2) *In re Dailey* includes multiple references, and (3) *In re Dailey* only addresses a single feature. Since *In re Dailey* is not applicable to this case and all the elements of the claim 4 are not found in Fasano et al., applicant assumes that the Examiner is taking official notice of the missing elements from an undisclosed source. Applicant respectfully objects to the taking of official notice, and pursuant to M.P.E.P. § 2144.03, applicant traverses the assertion of official notice and requests that the Examiner cite a reference that teaches the missing elements. If the Examiner cannot cite a reference that teaches the missing elements, applicant respectfully requests that the Examiner provide an affidavit describing how the missing elements are present in the prior art. If the examiner cannot cite a reference or provide an affidavit, applicant requests withdrawal of the rejection and reconsideration and allowance of claim 4.

Claim 5 recites "... at least one of the only two of the three vias coupled to the substantially straight edges is coupled to one of the substantially straight edges through a tapered conductive segment." The office action admitted that Fasano et al. does not teach "... at least one of the only two of the three vias coupled to the substantially straight edges is coupled to one of the substantially straight edges through a tapered conductive segment." But, the office action maintained that this element is inherent in Fasano et al. Applicant respectfully submits that Fasano et al. does not connect vias to pads through conductive segments, but rather connects vias directly to pads as shown in FIG. 3E of Fasano et al. Applicant also respectfully submits that the office action has not established a *prima facie* case of inherency because, as recited in MPEP § 2112, "In relying upon the theory of inherency, the examiner must provide basis in fact and/or

technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art," citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

The office action only argued that Fasano et al. can be modified to include a tapered conductive segment to couple a via to a pad. Thus, the office action does not even assert that the allegedly inherent characteristic is necessary, let alone provide a basis in fact and/or technical reasoning. Applicant respectfully submits that claim 5 does not necessarily flow from Fasano et al. because vias are directly coupled to pads in Fasano et al. as shown in FIG. 3E. Therefore, applicant requests withdrawal of the rejection and reconsideration and allowance of claim 5.

So called "prior art" "made of record but not relied upon"

Several patents were cited as "pertinent to applicant's disclosure" but not relied upon to reject claims. In view of the fact that the patents were not asserted against any claims, applicant need not respond either to the assertion of their pertinence or to any assertion that any of the listed patents constitutes "prior art" to any pending claim. Applicant expressly reserves the right to challenge any such assertion, should it be included in some future rejection.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone applicant's attorney at 612-371-2109 to facilitate prosecution of the application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ERIK W. JENSEN

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 371-2109

Date January 18, 2002

By Danny Pody
Danny J. Pody
Reg. No. 35,635

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, Washington, D.C. 20231, on this 18 day of January, 2002.

Jane E. Brockschink
Name

Jane Brockschink
Signature